

***Dactylogyrus greenei* sp. n. (Monogenea: Dactylogyridae) from the Wedgespot Shiner, *Notropis greenei* Hubbs and Ortenburger (Pisces: Cyprinidae)**

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ABSTRACT: *Dactylogyrus greenei* sp. n. is described from the wedgespot shiner, *Notropis greenei* Hubbs and Ortenburger. *Dactylogyrus greenei* differs from its closest apparent relative, *D. crucis* Rogers, 1967, most notably by having a longer and more slender cirrus and larger accessory piece.

KEY WORDS: Monogenea, Dactylogyridae, morphology, systematics, *Dactylogyrus greenei* sp. n., *Notropis greenei*, Arkansas.

A new species of *Dactylogyrus* Diesing, 1850, is described from the wedgespot shiner, *Notropis greenei* Hubbs and Ortenburger, 1929, a cyprinid fish endemic to the Interior Highlands (Ozarks) of the eastern United States (Robison and Buchanan, 1988). This is the first report of any parasite from the wedgespot shiner.

Materials and Methods

Wedgespot shiners were collected through use of a minnow seine on 4 August 1973, 5 June 1991, and 27 July 1991. They were placed in vials containing a 1:4,000 formalin solution immediately after capture; after approximately 1 hr, enough formalin was added to make a 10% solution (Putz and Hoffman, 1963). The parasites, collected from the gills of their hosts, were mounted in glycerin jelly, and observations were made with a Zeiss phase-contrast microscope. Drawings were made with the aid of a Zeiss drawing tube. Measurements, in micrometers, were made as presented by Mizelle and Klucka (1953); means are followed by ranges in parentheses. Numbering of haptoral hooks is after Mueller (1936); 4A hooks (Mizelle and Price, 1963) are considered to be ventral anchors (Kritsky and Kulo, 1992). Type specimens were deposited in the helminthological collection of the National Museum of Natural History (USNM) and the Harold W. Manter Laboratory, University of Nebraska State Museum (HWML). For comparative purposes, all original descriptions and redescrptions of North American *Dactylogyrus* species and 7 paratypes of *D. crucis* Rogers, 1967, from the collection of Dr. Wilmer A. Rogers (WAR) were examined.

Results and Discussion

***Dactylogyrus greenei* sp. n.**

(Figs. 1–8)

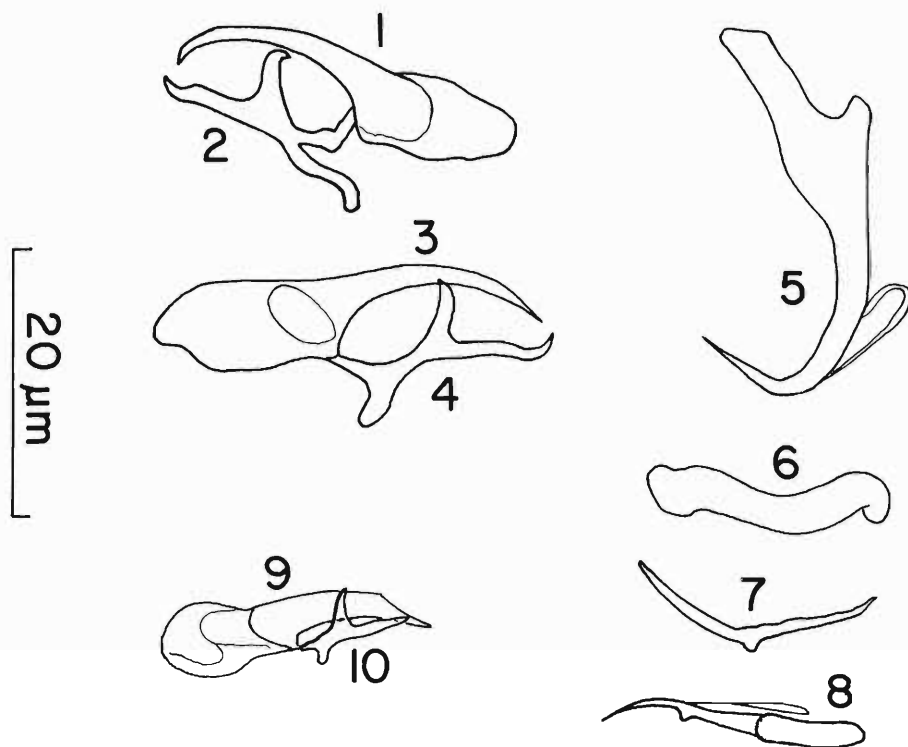
TYPE LOCALITY: Arkansas: Franklin Co., Mulberry River at small road to right of Redding Access, 3 km E of Cass, Arkansas River drainage.

TYPE SPECIMENS: Holotype, USNM 83845;

19 paratypes, USNM 83846 (2 specimens), USNM 83847 (10 specimens), USNM 83848 (2 specimens), HWML 37514 (5 specimens).

OTHER LOCALITIES: Arkansas: Johnson Co., Big Piney Creek at State Highway 123, ca. 0.3 km downstream on gravel road, Arkansas River drainage; Perry Co., South Fourche La Fave River at the gauging station, Arkansas River drainage.

DESCRIPTION: With characters of the genus as emended by Mizelle and McDougal (1970). Body with thin tegument; 249 (180–288) long, greatest width 56 (43–79). Two pairs of anterior cephalic lobes, lateral pair smaller than medial pair. Head organs not observed. Two pairs of eyes, anterior pair usually larger and farther apart than posterior pair. Pharynx circular to ovate (dorsal view), transverse diameter 18 (15–25). Gut not observed. Peduncle 16 (0–32) long, 34 (17–46) wide. Haptor 39 (32–49) long, 54 (42–70) wide. Dorsal anchor composed of solid base with short deep root, elongate superficial root, shaft curving to a sharp point; 29 (27–32) long, greatest width of base 12 (9–14). Dorsal bar 17 (14–18) long. Ventral anchor (4A) (see Kritsky and Kulo, 1992) 5 long. Vestigial ventral bar 19 (16–21) long. Fourteen hooks (7 pairs), similar in shape, with typical dactylogyrid arrangement (Mizelle and Crane, 1964). Each hook composed of solid base, slender shaft, and sickle-shaped termination provided with opposable piece. Hook lengths: No. 1, 16 (15–18); 2, 18 (15–21); 3, 23 (21–29); 4, 20 (18–25); 5, 20 (15–23); 6, 17 (14–19); 7, 18 (15–21). Copulatory complex composed of cirrus; articulated accessory piece. Cirrus bearing a gently curving slender shaft with a sharp terminus, 28 (25–29) long. Accessory piece cruciform, 15 (12–



Figures 1–10. Sclerotized parts of *Dactylogyrus* species (drawings are of the holotype unless otherwise specified). 1–8. *Dactylogyrus greenei* sp. n.: 1, 3 (USNM 83846, slide DGC 53-1), cirrus; 2, 4 (USNM 83846, slide DGC 53-1), accessory piece; 5, dorsal anchor; 6, dorsal bar; 7, ventral bar; 8, hook. 9, 10. *Dactylogyrus crucis*. 9 (WAR), cirrus; 10 (WAR), accessory piece.

16) long, distal and medial processes recurved. Vagina not observed. Vitellaria distributed from pharynx region to haptor.

REMARKS: The closest apparent relative of *Dactylogyrus greenei* is *D. crucis*, a parasite reported from *Lythrurus ardens* (Cope), *L. bellus* (Hay), and *L. roseipinnis* (Hay) (Rogers, 1967). Both species possess a cruciform accessory piece. The major differences are as follows: the cirrus of *D. greenei* (Figs. 1, 3) is longer and more slender than that of *D. crucis* (Fig. 9); the cirrus of *D. greenei* tapers to a point distally, whereas that of *D. crucis* has a truncate opening; the accessory piece of *D. greenei* (Figs. 2, 4) is larger and has more winding processes than those of *D. crucis* (Fig. 10).

Dactylogyrus greenei was the only monogenean found on the wedgespot shiner, occurring on 7 of 10 fish examined and averaging 3.5 individuals per fish (range 0–19). Its absence from other sympatric and syntopic cyprinid species (author's unpublished data) indicates that *D.*

greenei is monoxenous, parasitizing only the wedgespot shiner.

ETYMOLOGY: *Dactylogyrus greenei* is named after its host.

Acknowledgments

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1995 Meeting Schedule

(Wednesday) 8 February 1995
(Wednesday) 8 March 1995
(Saturday) 6 May 1995

October 1995
November 1995

Naval Medical Research Institute, Bethesda, MD
Walter Reed Army Institute of Research, Washington, DC
Joint Meeting with the New Jersey Society for Parasitology,
at the New Bolton Center, University of Pennsylvania,
Kennett Square, PA
Site to be announced
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